

# Open Research Online

---

The Open University's repository of research publications and other research outputs

## Researching academic literacy practices around Twitter: Performative methods and their onto-ethical implications

### Book Section

#### How to cite:

Fransman, Jude (2013). Researching academic literacy practices around Twitter: Performative methods and their onto-ethical implications. In: Goodfellow, Robin and Lea, Mary R. eds. Literacy in the Digital University: Critical perspectives on learning, scholarship and technology. Society for Research into Higher Education (SRHE) series. Abingdon: Routledge, pp. 27–41.

For guidance on citations see [FAQs](#).

© 2013 The Author



<https://creativecommons.org/licenses/by-nc-nd/4.0/>

Version: Accepted Manuscript

Link(s) to article on publisher's website:

<https://www.routledge.com/products/9780415537971>

---

Copyright and Moral Rights for the articles on this site are retained by the individual authors and/or other copyright owners. For more information on Open Research Online's data [policy](#) on reuse of materials please consult the policies page.

---

[oro.open.ac.uk](http://oro.open.ac.uk)

# **Researching academic literacy practices around Twitter: Performative methods and their onto-ethical implications**

Jude Fransman

## **Abstract**

This chapter takes the example of the micro-blogging platform Twitter to explore the nature and implications of research into literacy practices in the 'digital university'. Drawing on data collected for a study on the use of Twitter by academics at a British university, it compares the different and often contradictory findings that emerged from three datasets. Though focused on the same broad population, the datasets were grounded in three distinct methodological approaches (metric analysis, survey, and ethnography) and responded to different institutional and personal agendas. After a discussion of the data itself, the assumptions embedded within the approaches are unpacked and the implications for locating and researching 'the Digital' interrogated. The chapter concludes by addressing the implications of a performative reading of method on research into literacy in the digital university, arguing that researchers should acknowledge the enactments of 'the Digital' that emerge through their methods and texts and consider the onto-epistemological and ethical implications of these enactments.

## **1. Introduction**

Though undoubtedly a contentious concept, the notion of 'digital literacy' has gained currency in recent years. Intrinsically linked to research within the fields of library and information studies (e.g. Borgman 2007); educational technology (e.g. Pearce et al 2010; Weller 2011); academic literacies (McKenna 2006; Lea, 2007; Goodfellow 2011 Lea and Jones 2011); and the emerging field of 'digital humanities' (Schreibman et al 2004; Unsworth 2005). This recent proliferation of academic studies into the design and use of digital technologies and texts has focused both on general practices spanning the use of multiple digital resources and on practices specific to particular digital resources, such as the micro-blogging platform Twitter. In the context of Higher Education, research into Twitter practices has focused on user identities and the micro-dynamics of use (e.g. Reed 2005; boyd et al 2010; Marwick and boyd 2011); use of the resource for teaching and learning (e.g. Fernandez-Villavicencio 2010; Rinaldo et al 2011; Junco and Loken 2011; Kassens-Noor 2012); and use of the resource in domains such as libraries and lecture halls (e.g. Cuddy 2009; Elavsky 2011; Tyma 2011).

It is important to note that this proliferation of academic studies on the use of Twitter in universities occurs against the backdrop of a similar proliferation of commercial research tools available for personal use online. Such tools draw on methods such as psycho-social personality profiling (to describe and classify users); textual analysis (to quantify frequently used terms and topics); and network analysis (to describe relationships between users focusing on variables such as the size of a network and relative influence of individuals within a network). While these commercial tools may not carry the same authority as academic methods, they nevertheless generate significant data that is often

subsequently 'mined' by academics. The methods they use are also sometimes reproduced in academic studies by academics familiar with the tools. The most popular tools such as 'Klout' (which measures Twitter users' 'online influence') play an arguably *performative* role<sup>1</sup> by influencing as well as reflecting behaviour. For example, a Twitter user aware of their 'Klout score' in relation to their peers' may modify their behaviour in an attempt to improve their score by increasing indicators such as their numbers of 'followers', 'mentions' and 're-tweets'.

This performative potential of both commercial tools such as Klout and tools for academic data collection (ranging from scientific instruments to social surveys) has been well documented (e.g. Callon 1998; Barad 2003; Law 2004; Latour 2005; Burawoy 2005). John Law who's recent work has focused on the performativity of method in the social sciences, argues that research methods should be understood as living a 'double social life' (2010). Firstly, they are shaped by the social: they have purposes, sponsors, and they draw upon or are adaptations of, existing methodological, cultural, and/or social resources. This is important when considering the impact of the commercial context (the ownership and accessibility of data and the way it is framed by digital resources) on the development of academic research (see Williams in this volume). But secondly, methods also shape or *enact* the social. As well as reflecting or making discoveries about social reality, methods also make more or less self-fulfilling assumptions about the nature of the social world and in so doing tend to shape it by producing what Law (2009) refers to as 'collateral realities'.

Returning to the example of the commercial Twitter analysis tool 'Klout', collateral realities might include assumptions about the 'influence' of individuals in relation to a broader network. Indicators for influence include: 'number of tweets' signifying level of activity; 'number of followers' signifying popularity; 'number of mentions' signifying active engagement with followers; and 'number of re-tweets' signifying impact. While such indicators may be appropriate proxies for influence, it is important to bear in mind what they exclude as well as include. For example, a user who invests considerable time in reading colleagues' tweets but does not write her own would not be considered – at least by Klout – as an active Twitter user.

In order to explain such mechanics of inclusion/exclusion in a research tool, Law expands Deleuze and Guattari's notion of the 'assemblage' (1987) into the concept of 'method assemblage' in which certain elements are included and certain elements excluded or 'Othered' (Law 2004: 55). A composite Klout score for influence will make manifest *writing* practices but not *reading* practices. It will also only reflect interactions occurring within the medium of Twitter. For instance, if a user decides to respond to a follower's tweet through an alternative channel such as an email, text, or face-to-face conversation, this activity will be Othered. Another assumption is that users are autonomous individuals rather than relational social actors. Tweets which are the product of collaborative interaction (e.g. postings from a project) are recorded as the activity of the

---

<sup>1</sup> Law (2004) suggests that the term 'enactment' is preferable to the term 'performativity' since the latter has been used in ways that link it either to theatre, or more generally to human conduct

account from which they originate. In this way, both non-tweeting participants and the social context of the tweet are also Othered by the Klout score.

In questioning why certain things are Othered, Law (2004: 117-120) suggests that Otherness tends to take three key forms. Firstly, what is 'routine' might be Othered. For example, indicators such as 'number of characters in a tweet' are excluded on the assumption that the length of most tweets will be close to the 140 character limit. Secondly, what is 'insignificant' may also be Othered. For example, though data is available about the device on which a tweet has been composed (e.g. smartphone, tablet or computer), this is not deemed significant to an assessment of influence and is therefore excluded from the score. Thirdly, Othering can also serve to 'repress' certain things which might risk compromising present things. For example, an indicator which measures the level of heterogeneity in a user's network (in terms of nationalities, languages, ages, genders etc.) may risk undermining the authority of the primary indicator for influence: 'number of followers' so must also be excluded. To Law's three forms of Otherness, I have also proposed the addition of a fourth (see Fransman 2012): Things are excluded simply because they don't 'fit' with the (social or material) form of the text, artefact or device that accommodates them. Or conversely, things are included – in part – because of the ease with which they can be transported or *recontextualised* from one text, artefact or device to another. So, for example, the quantitative indicators which make up the Klout score for influence (numbers of 'tweets', 'followers', 'mentions', 're-tweets' etc.) are clearly better suited to the purpose of summarising large bodies of comparable, standardised data than qualitative indicators would be. They are also easily transportable across at least three artifactual domains: Twitter itself, which quantifies some of the indicators automatically and records the others chronologically; Klout as an intermediary tool, which recontextualises some of the data and interprets the rest; and other commercial, personal or academic tools which recontextualise the Klout score either as a representation of a single user (on a personal blog, for example) or as a composite indicator for 'influence' to be used in broader data analysis processes (in a statistical analysis package, for example). So the necessary Othering of aspects of Twitter use (such as reading rather than writing tweets or responding to tweets through an alternative medium to Twitter) is partly to do with the material *affordances*<sup>2</sup> of the tools which frame the data collection. Since Twitter can't capture the act of reading a text and has no access to interactions which extend beyond the boundaries of the platform, these aspects must be excluded. This of course has implications both for the validity of the data generated through these tools and for the ontological effects of these tools or the 'collateral realities' they enact.

---

<sup>2</sup> The use of the term 'affordance' by social semioticians evolved from work on cognitive perception by Gibson (1977) and design by Norman (1988, 1990) (see Jewitt 2009: 24) though Jewitt argues that neither Gibson nor Norman's notion of affordance adequately acknowledges how tools (conceptual and material objects) are shaped by people's use of them in specific social situations (Jewitt 2008). For the purpose of my analysis I employ the term in a similar way to Theo van Leeuwen (2005) to refer to a mode, text, device or method which is shaped by the different ways in which it has been used, what it has been repeatedly used to mean and do, the social conventions and material possibilities that inform its use in context, and its potential uses.

As shown through the examples above, perhaps the most fundamental ‘collateral reality’ produced by Klout is the notion of the Twitter user as an autonomous (and standardized) individual rather than as a socially relational actor. Such a conception is not surprising. Klout is a commercial service and draws on the principle of competition to entice users into comparing themselves to others in their network. This ideological principle (which enables the quantification and subsequent ranking of ‘followers’, ‘friends’, ‘contacts’ etc. across a whole host of social networking sites) also exists in Twitter and the quantitative artefacts it generates are therefore easily transportable across the two resources.

Both commercial analysis tools and academic research tools maintain that their purpose is to reflect rather than affect reality. However, as shown through the assumptions, affordances and agendas of Klout, any method reproduces existing realities and may also generate new ones. And since any act of making presences also involves making absences (Derrida 1982) some realities are undermined just as others are enacted. In this way any method “unavoidably produces not only truths and non-truths, realities and non-realities, presences and absences, but also arrangements with political implications” (Law 2004: 143). Such claims release the floodgates of an ethics of social enquiry and as Donna Haraway (1997) reminds us, *there is no innocence* in the work of a researcher. The question of what might be brought into being in the relations of research and, indeed, what *should* be brought into being constitutes ‘ontological politics’ (Mol 1999; Law 2004).

In the following section, I draw on data collected through a recent academic study on the use of Twitter by academics at a British university to explore how the ontological politics inherent within three very different methods gave rise to different findings and different enactments of ‘the digital’. As Mol (1999) explains, the term suggests a link between the real, the political and the *conditions of possibility*<sup>3</sup> we live with and connects to Karen Barad’s notion of “ethico-onto-epistem-ology.” According to Barad, what is needed is:

... an appreciation for the intertwining of ethics, knowing and being – since each intra-action matters, since the possibilities for what the world may become call out in the pause that precedes each breath before a moment comes into being and the world is remade again, because the becoming of the world is a deeply ethical matter. (Barad 2007: 185)

## 2. Academics use of Twitter at a British University

---

<sup>3</sup> Latour and Woolgar (1979) Mol (2002) and Law (2004a) all adopt the notion of ‘conditions of possibility’ from Foucault who argued that the apparatuses of scientific production sets limits to what is possible. The notion of ‘ontological politics’ as used by Latour and Woolgar, Mol and Law differs slightly from Foucault’s use in that it is drawn on a more modest scale suggesting that “the limits to scientific knowledge and reality are set by *particular and specific sets of inscription devices*” (Law 2004a: 35 italics in original) rather than by larger epistemes. It is therefore probably closer to Foucault’s later notion (1980) of the *dispositif* (see Savage et al 2010) which includes an array of material, human and behavioural elements and so extends beyond the discursive reach of the episteme.

In 2011 the Open University (OU) launched an internally-funded study into the use of digital technologies by academics for the purpose of research and teaching. Guided by the Institute of Educational Technology, the dual aims of the research programme were firstly, to develop a digital tool for measuring the 'digital footprint' of individual academics (in order to prompt personal reflection on use of digital resources and as a result promote greater use of resources) and secondly, to use the data generated by the tool to better understand the digital practices of academics across the university (why certain resources were or weren't being used and how they were being used in different disciplines). To pilot the study the decision was made to focus on Twitter. This would enable in-depth insight into the specific use of one resource as well as an understanding of how Twitter-use linked to the use of other digital resources.

The aims of the digital footprint tool were not dissimilar to those of the commercial Twitter analysis tool Klout; that is, to identify the digital influence of academics using Twitter (and later across platforms including Facebook, Youtube, Slideshare and Academia.edu). In this way, indicators such as number of 'followers', 'tweets', 'retweets' etc. provided key measures of the size of an academic's digital footprint in a similar way to the Klout score for influence. Though the nature of Klout (as a commercial tool) differs significantly from the OU's digital footprint tool (as a tool for academic learning and career development) the two resources nevertheless shared an interest in 'influence'. In Klout, this is consistent with the broader commercial agenda of enhancing use by promoting competition between individual users, while at the OU this was consistent with the broader institutional agenda of demonstrating academic impact (and measuring the value of individual academics according to impact indicators set out by the Research Excellence Framework). Consequently, the types of indicators employed by both tools were remarkably similar.

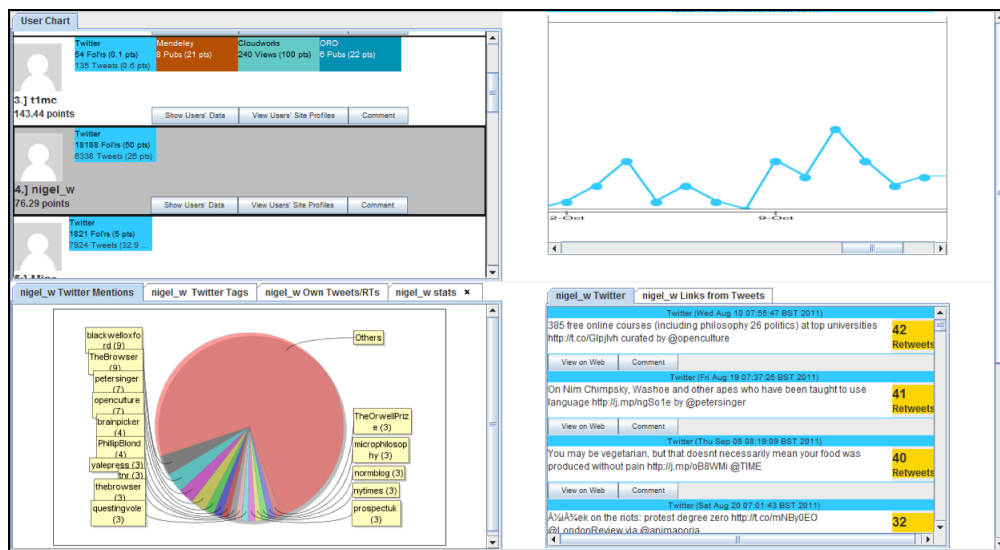
The second aim of the OU research programme (to better understand the digital practices of academics across the university – and specifically, the Twitter practices of academics in the pilot) was originally designed to draw on the data collected through the digital footprint tool. A methodology based on metric analysis was developed to establish the nature of the Twitter networks of OU academics as well as the extent to which individual academics used Twitter and the nature of their use. However, due to delays in the development of the tool as well as challenges in obtaining private data from individuals and the inability of the tool to account for reasons why Twitter *wasn't* being used, a decision was taken to broaden out the research methodology in order to capture data on the use (and non-use) of Twitter by academics across the university. To this end, a survey was developed and administered to academics in the Sciences and Arts/Humanities faculties and an ethnographic case study was undertaken to explore digital practices in a digital humanities project.

In the following sections I draw on Law's (2004) framework outlined in the previous section to unpack the method-assemblages inherent within the three approaches, highlighting what is made present or Othered by each.

## **2.1 Metric analysis**

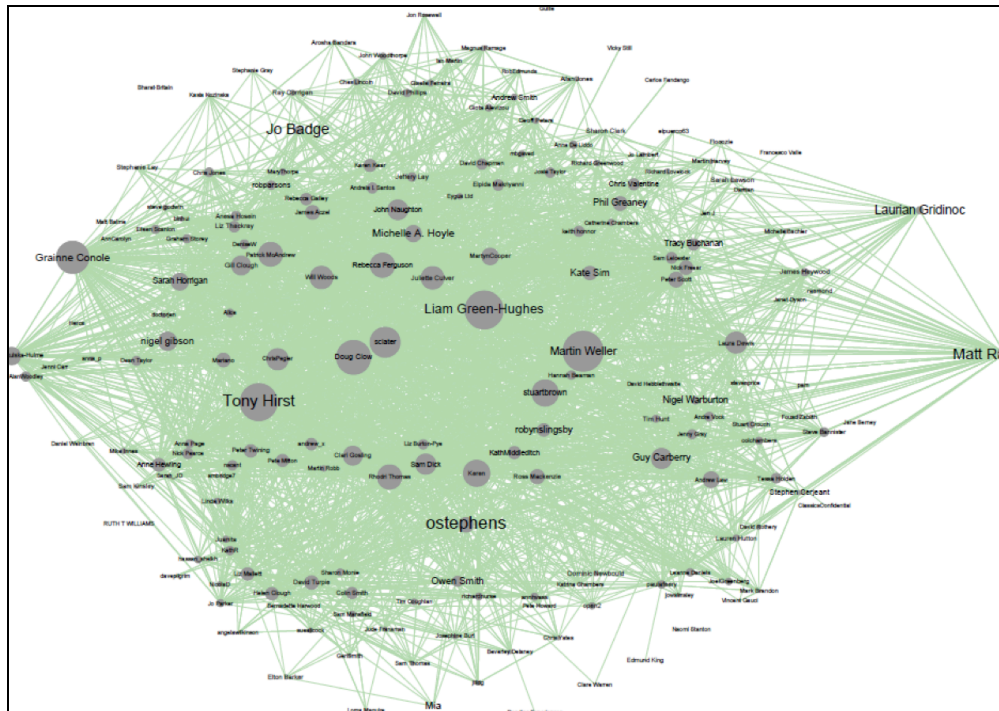
In the first approach, an interactive visualisation tool (IDSVis) was developed to generate data on Twitter-use across the university and to allow academics to explore their own usage as well as that of their colleagues. The tool accessed and displayed data in four different panels: A chart ranking users based on statistics about their use of Twitter as well as a selection of other digital platforms, a graph showing the number of tweets over time, pie charts showing the most used phrases and most mentioned users for each individual user, and a list of all tweets, ordered from the most to the least 're-tweeted' (see Figure 1 below).

**Figure 1: Visualisation of individual Twitter use by academics at the OU**



Network diagrams were then created to visualize the links between academics, illustrating the relationship between Twitter-users and their followers. The data was displayed such that the size of an academic's name represented the total number of tweets they had made, and the size of a circle on their name represented the total number of followers they had. Positioning in the diagram was also significant with proximity between users demonstrating academics with similar networks and centrality demonstrating a broad range of connections across diverse groups within the university (see Figure 2 below).

**Figure 2: Network diagram of Twitter use amongst academics at the OU**



The data generated through DSVIs resulted in a number of key findings: firstly, that certain individuals act as ‘hubs’, connecting and mediating others; secondly, that influence in a network is based on a large number of tweets, followers, mentions, and re-tweets; and thirdly, that influential users tend to make greater use of a range of digital resources (beyond Twitter). The primary conclusion emerging from these findings was therefore that developing a strong ‘digital footprint’ will enhance an individual’s influence in academic networks: a conclusion consistent with the institutional agenda that fuelled the study.

Embedded in these findings (and the data collection and representation that informs them) are a number of assumptions that might be presented as manifest presences and Otherings. The most explicit of these is the Othering of non-Twitter using academics who are considered, according to Law’s typology, as ‘insignificant’ to the issue of academic twitter practices and are consequently excluded from the visualisations. Another expression of significance is the manifestation of ‘tweets over time’ (represented in the graph in Figure 1) and simultaneous Othering of ‘tweets across space’, which could easily have been represented by a map – a common feature in other examples of user-analytics – but was not deemed relevant to the analysis of influence. Elements are also Othered in order to repress what may undermine the present indicators. For example, a key indicator of individual influence is the ‘total number of followers’ (represented in Figure 2 by the size of the individual’s name). However, the total number of academics that an individual follows is excluded from the data, implying that influence is uni-directional. This Othering of ‘number of academics followed’ (as opposed to ‘number of academic followers’) is also determined by the material affordances of the representational tool. In order to appear uncluttered, the visualisation in Figure 2 includes just two measures of influence (numbers of followers and tweets) represented by size (of *written* name and



*graphic circle*). The visualisation in Figure 1 also includes a measure based on 'number of re-tweets' which is expressed more implicitly through the ordering of the users' tweets in the bottom right-hand corner of the screen. Finally, the focus on the number of tweets *written* as opposed to the number of tweets *read* is also linked to the material affordances of the data collection and visualisation tools in their inability to capture the act of reading tweets.

## 2.2 Survey

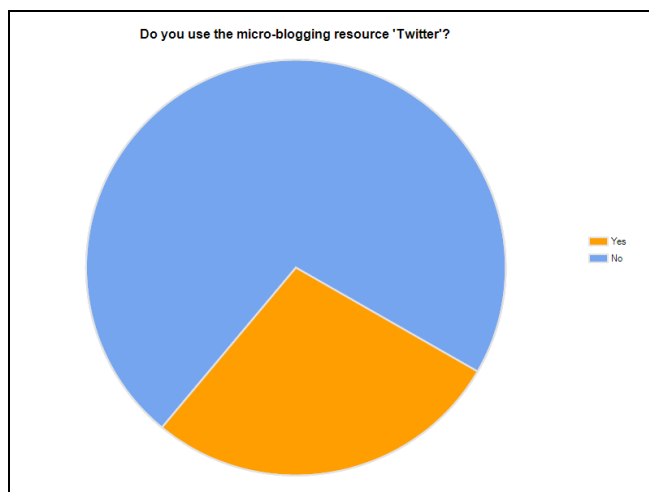
In order to sample a more representative population of academics and explore in more depth the nature of Twitter-use by academics, a survey was developed with a follow-up focus group to probe deeper into responses. Generating both quantitative and qualitative data, the survey and focus group questions concentrated on the following issues:

- Numbers and proportions of academics using Twitter
- Reasons for joining Twitter
- Reasons for sustained use/non-use of Twitter
- Perceived functions of Twitter
- Perceived skills required to use Twitter
- Links between Twitter use and the use of other digital resources

The survey was administered to academics in the Arts and Humanities faculty and the Sciences faculty at the OU. Once the data had been processed and analysed a focus group was organised with respondents to the survey. The focus group consisted of a physical group-discussion and a simultaneous virtual discussion structured around the same questions and visible to the physical participants on a central screen.

While the survey generated some substantial data, the primary finding was that very few respondents (just 29%) claimed they used Twitter (see Figure 3). This was due to reasons ranging from perceptions about the social and material affordances of Twitter (for example, that it was a social rather than professional tool and that the 140 character limit was an inadequate vehicle for scholarly work); to perceptions about the skills and resources required to use Twitter (including technological proficiency and access to an iPhone); personal preferences (around privacy, for example); and established use of other resources to serve similar functions (including social and academic networking platforms). The respondents who did use Twitter tended to utilise other digital resources to a greater extent than the non-Twitter users and also tended to have more colleagues using Twitter. Again, the conclusions emerging from these findings were broadly in line with the institutional agenda behind the research: that Twitter-use was positively linked to strong 'digital scholarship' practices and better networking across the university and that non-use was largely due to ignorance about the nature of the resource and lack of confidence about proficiency in using the resource. The development of training programmes to address these issues was recommended.

**Figure 3 Who uses Twitter at the OU?**



As with the metric analysis approach discussed above, the survey tool also generated presences and Otherings through its assumptions. The most notable of these was that academics were defined firstly by their use of Twitter (either as 'users' or 'non-users') and secondly by their discipline (either as Arts and Humanities scholars or Science scholars). Both dichotomies served to Other identities that fell between or outwith these categories. Examples of these included academics without their own Twitter accounts who occasionally read other people's tweets, and academics who might belong to a particular faculty but consider their academic identity to be, for instance, interdisciplinary. In both cases, the material affordances of the survey tool reinforced such types of Othering. Respondents were forced to describe themselves as either users or non-users of Twitter and were re-directed to specific follow-up questions based on their selection. The variables of 'Twitter-use' and 'discipline' were also employed for the purpose of analysis and in order to select participants for the focus group discussion. These two primary variables (as aggregates of the individual respondents and focus group participants) also concealed another type of Othering. As with the metric analysis, Twitter-use was portrayed as an individual (as opposed to social) practice. Though the focus group generated qualitative anecdotes about experiences with Twitter in the social context of the faculty, university and beyond, these were used primarily to illustrate the quantitative findings. Once again, the material affordances of the data collection tool (designed through the software 'SurveyMonkey') and the modes of data representation (as charts and graphs which might be easily recontextualised in publications and presentations) contributed to such Othering. Finally, the primary function of the survey approach – to generate a snap-shot of a cross-section of a particular population at a particular point in time – served to Other any changes in Twitter-use by individuals over time or indeed any changes in the social-material affordances of Twitter as a device over time.

### **2.3 Ethnographic case study**

To provide insight into the use of Twitter by a particular research community in the university, a qualitative case study was conducted of a project based within

the faculty of Arts and Humanities. The aims of the 'Pelagios project' were to introduce linked open data into online resources that refer to places in the Ancient World. Over a three-month period, ethnographic fieldwork was conducted including observations of the project's team meetings and conference as well as interviews with key members of the project team. The data generated from this fieldwork comprised of four data-sets: fieldnotes; a record of the Pegalios 'hashtag' on Twitter; the project blog and other online resources; and interview transcripts. Initial analysis of these datasets identified central questions (such as 'how useful is Twitter for different types of academic practice?'; 'how do digital resources such as Twitter help to construct/challenge the boundaries of academic communities?'; and 'how does (non)participation in Twitter contribute to the definition of identities/roles in a research project?')

Unsurprisingly for a study of this nature, the ethnographic findings were more complex and problematized than those of the metric analysis and survey. Twitter-use was found to be distinctly social with non-Twitter-using team members often having a direct impact on the content of tweets (translated from conversations or emails by Twitter-using colleagues). Materially, Twitter-use could not be segregated from other digital and non-digital literacy practices since ideas and information crossed multiple channels of communication over the course of their development. And the use of Twitter was not consistent even within an individual user but rather evolved over time as users experimented, learned from their peers and used Twitter on new devices against an evolving backdrop of social etiquette in the broader 'Twittosphere'.

Such findings lead to a number of conclusions: that academic use of Twitter must be evaluated in context; that distinguishing users from non-users is problematic since use evolves over time and a tweet is not necessarily composed by an individual alone; and that Twitter should not be perceived as a static resource since (materially) it is constantly evolving in response to user-feedback and competition from other resources, and (socially) it is constantly evolving in response to shifts in etiquette and conventions. Unlike those stemming from the metric analysis and survey approaches, these rather polemical conclusions sat in tension to the institutional agenda which fuelled the research. Rather, they reflected the personal and professional agendas of the ethnographic researcher who's own research design had been partly informed by a somewhat sceptical response to the findings emerging from the metric analysis and survey.

However, the ethnographic approach also generated presences and Otherings due to its assumptions and the affordances of its method assemblage. These ranged from the substantial amount of data which slipped through the cracks in the processes of sorting, analysing and representing the different data-sets (hash-tag archives which had expired before the tweets had been consolidated and extensive video footage which was simply too lengthy to reflect in its entirety, for example) to the data which remained hidden throughout (for instance, direct Twitter messages between team-members which are not publically accessible.) The focus of the observation on social interactions amongst the project team also Othered detailed insight into individualized social-material Twitter practices, which might have been captured by tools designed for studies in Human-Computer Interaction. Similarly, Twitter-based

networks which extended beyond the context of the project team were also Othered. Finally, the focus on the social, human make-up of the project team Othered to some extent the materiality of Twitter as a platform and the devices on which it was used. Such types of Othering are partly due to the social-material affordances of ethnography as a (social) genre which tends to be represented as lengthy (material) written descriptions rather than the visual or graphic representations of other methodological approaches.

### **3. Locating (and enacting) 'the Digital'**

As the researchers attempted to consolidate the findings from the three approaches described above, it was clear that significant tensions existed between them. From these tensions a number of conceptual and methodological questions emerged: Can academics be described as either users or non-users of particular digital resources? Are digital and professional identities fixed or contextually determined? Is 'influence' a useful measure of digital proficiency and if so, how can it be measured? Can digital literacy practices be invisible and if so, how might one capture activities such as reading and thinking as well as writing? And how can analysis account for changes in users and resources over time while producing generalizable data?

Any response to such questions will depend on the particular methodological and theoretical approach adopted and the conceptual level at which 'the Digital' is located. The locations of these levels might be categorised as follows: within the individual (with conceptualisations taking the form of *digital identities* and *digital skills*); in groups (with a focus on *digital networks* of individual academics; or *digital practices* in *digital communities*); in institutions (conceptualised as the *digital university*); and in the material resources themselves (concentrating on *digital devices*)<sup>4</sup>. Since these conceptualisations have methodological implications, they warrant some further discussion.

#### **3.1 Locating 'the Digital' at the level of the individual: identities and skills**

The first conceptual approach situated at the level of the individual centres on 'digital identities'. Emerging from the psycho-social literature, this approach involves conceptualisations of digital literacy which tend to be based on academic personality/character/identity profiling, often resulting in typologies or dichotomies such as Prensky's (2001) widely critiqued distinction between digital natives and digital immigrants. Accordingly, the focus here is on the individual academic and their digital identity which might be fixed (as with Prensky's dichotomisation) or might be reformulated to suit particular needs in different contexts (see White's distinction between digital residents and

---

<sup>4</sup> A final conceptual frame attempts to capture 'The Digital' as a phenomenon in its entirety. In a recent paper Savage et al (2010) identify three different framings: firstly, conceiving 'the Digital' in terms of epochal shifts; secondly, conceiving 'the Digital' as a new era of mobility or flow; and thirdly, conceiving 'the Digital' as redefining life. The authors also propose a fourth which is attentive to the materiality and performativity of 'the Digital'. Since this conceptual orientation is focused on the meta-level research question of 'what is the Digital?' it is not geared towards empirical enquiry but rather requires a philosophical response grounded in social theory.

visitors.) More recently, Weller (2011) has tentatively defined a 'digital scholar' as "someone who employs digital, networked and open approaches to demonstrate specialism in a field." Research located at this level tends to explore the ways in which different digital identities are determined by variables such as age, gender, socio-economic status, academic discipline etc. and distributed across different digital sites and platforms. To address such issues, this approach lends itself towards a methodological design based on surveys (where patterns and trends in the aggregated digital identities of a particular population might be identified). Through such methodologies, old typologies might be confirmed, rejected or adapted and new typologies might be designed.

A related approach conceptualised at the level of the individual focuses on the digital skills or competencies of the individual scholar (see Eshet-Alkalai 2004; Kenton and Blummer 2010). This approach tends to emerge from the literature on 'information literacy' (from information and library studies) and educational psychology where literacy is used as a metaphor for autonomous skills. In this approach, decontextualized digital skills can be acquired through formal or nonformal means and once learnt can, be transferred for use in different domains for different purposes<sup>5</sup>. Methodologies such as surveys sampling particular populations might be used to capture attitudes and behaviour in relation to digital skills. Experiments based on direct assessment of digital skills might provide a more accurate measure and longitudinal experiments might be used to track changes in skills over time in line with evolving use of technologies.

### **3.2 Locating 'the Digital' at the level of the group: networks/communities**

In the second set of approaches the focus shifts to groups. The first of these focuses on aggregated networks of individuals, the skills they require to effectively function within these networks, and the digital resources that might facilitate participation in networks. While the vast majority of studies framed by this approach are extremely positive about the effects of digital interaction (see Steinfield et al 2009; Haythornthwaite and Kendal 2010 and Wang and Wellman 2010 who identify social networking as a 'social lubricant'), others have argued that much of digital communication is based on socially void interaction with non-human technologies (Nie 2001; Cummings et al 2002). Studies emerging from this approach are likely to question the ways in which groups of people are configured through different digital technologies. An apt methodological design to address this type of question is likely to employ mass observation or metric analysis to collate statistics about different digital networks. As with the metric analysis of Twitter-use described above, such quantitative analysis might, for

---

<sup>5</sup> This assertion has been critiqued through the work of the 'New Literacy Studies' which attests that literacy is never autonomous but rather always socially-situated and ideological in its use (see, for example, Street 1984; Barton and Tusting 2005; Lea 2007). Consequently, it is better to talk of multiple *literacies* (according to the different social domains in which the practice might be situated) than of one singular, universal 'literacy'. Extending this position to the academy, scholars such as Jones and Lea (2008); Gillen and Barton (2010); and Goodfellow (2011) have explored how the digital is affecting academic practices (such as writing). Some of these scholars also draw on 'multimodal analysis' (see Jewitt 2009 and Kress 2010) to look beyond the written word multimodal communication practices based on image, sound, movement, gaze etc.

example, focus on networks of users of social networking sites, determining levels of 'connectedness' or 'influence' by comparing selected indicators.

In contrast to the 'networks' approach, a more qualitative and contextualised analysis of interactions between individuals focuses on *digital communities*. In this approach, the primary focus is on the role of 'the Digital' in mediating interaction between scholars and between scholars and artefacts within a particular academic community. This might be a university or a smaller community within the university (such as the Pelagios project team described above) or even a community which extends beyond the university (linking with the public, private or non-profit sector, for example). This approach has evolved through the pre-digital work of academics such as Holland et al (1998) on 'figured worlds'; and Lave and Wenger (1991) and Wenger (1998) on 'communities of practice' (CoP). Initially focussing on educational management, the notion of CoPs has been extended to account for power relations and the significance of the social context (see Barton and Tusting 2005). Scholars have also started to apply the model to online or virtual contexts (see Dubé et al. 2006). Though this approach tends to emphasise 'social' interactions between humans which are mediated by 'material' digital resources, it also includes studies on Human-Computer Interaction and Computer Supported Cooperative Work<sup>6</sup>. While this approach then encompasses many different (and often conflicting) conceptual strands, it is generally concerned with the ways in which 'the Digital' interacts with social practices and institutional processes to contribute to the formation/operation of academic communities. In response, apt methodological designs might integrate ethnography with discourse analysis or employ action research in collaboration with a particular digital community.

### **3.3 Locating 'the Digital' at the level of the institution: digital universities**

A third set of conceptualisations tackle 'the Digital' through the lens of the university as an institution. In these approaches, the analytical focus is on the relationship between digital technologies and institutional structures and processes (such as those surrounding management, publication, tenure, teaching and learning systems etc.). As scholars from a diverse range of disciplines have argued, digital practices might either reproduce the institutional structures already in place or challenge them (see for example Hazemi and Hailes 2002 on networked management; Cope and Kalantzis 2009 on digital publishing; and Weller 2010 on Open Educational Resources). There is therefore a need to consider not only the internal structures within the remit of university policy but also the external structures, policy domains and economies (such as publishing) with which it engages. An institutional perspective to the study of 'the Digital' might lend itself to methodological designs based on case studies using institutional ethnography or discourse analysis of university policy and practice.

### **3.4 Locating 'the Digital' at the level of the technology: the device**

---

<sup>6</sup> Grounded in Distributed Cognition, Socio-cultural Activity Theory, and phenomenological approaches to understanding subjective experience.

In contrast to the conceptual orientations discussed above which all tend to focus (to varying degrees) on human actors – either as individuals in their own right, as aggregates of individuals, as groups, or in interaction with social systems and material objects – this fourth approach focuses on the material device. Emerging from the field of Science and Technology Studies (and employing tool-kits such as Actor-Network Theory – see Callon 2006; Latour 1998; 2005; Law 1991, 2004) this approach adopts a resolutely non-humanist perspective which disrupts the human-technology dichotomy by positioning artefacts (such as digital technologies, media, sites or texts) as assemblages of heterogeneous socio-material relations. Due to the relational nature of each actor (which is always also an actor-network) a device might be ascribed the same type of agency as a human. Accordingly, a central research question for this type of approach would be: how are digital devices materially implicated in academic practice? Or in other words, how are digital devices assembled and once assembled, how do they configure people, other devices, institutions, and concepts? Methodologically, such questions might be addressed through analysis of the socio-material make-up of devices and the ways in which they mediate scholarship. Methods such as multimodal analysis of digital artefacts or virtual ethnography charting academic practices across devices might facilitate this.

The table below presents these four conceptual orientations, summarising the implications for research design.

**Table 1 Conceptual Approaches for Understanding Digital Scholarship**

<b>Level at which 'the Digital' is located</b>	<b>Conceptual frame</b>	<b>Main unit of analysis</b>	<b>Implications for research design</b>
Individual	<i>Digital identities</i>	Individual identities	Explores the psycho-social profile of a digital scholar. Methodologies include: <ul style="list-style-type: none"> <li>• Surveys</li> <li>• Interviews (multiple case studies)</li> </ul>
	<i>Digital Skills</i>	Skills/competencies	Explores the type of skills/competences that a digital scholar has or needs. Methodologies include: <ul style="list-style-type: none"> <li>• Assessment of digital competences</li> <li>• Longitudinal studies</li> </ul>
Group	<i>Digital networks</i>	Aggregations of and/or connections between individuals	Explores how groups of people are configured by the digital. Methodologies include: <ul style="list-style-type: none"> <li>• Mass observation</li> <li>• Metric analysis (i.e. measures of participation in different digital spaces)</li> </ul>
	<i>Digital communities</i>	Interaction between scholars and artefacts in a specific social context	Explores how 'the Digital' interacts with institutional processes to contribute to the formation/operation of scholarly communities. Methodologies include: <ul style="list-style-type: none"> <li>• Visual ethnography</li> <li>• Discourse analysis</li> <li>• Action Research</li> <li>• Observation of interaction between people/ digital artefacts</li> </ul>
Institution	<i>Digital universities</i>	University as organisation	Explores how 'the Digital' interacts with institutional processes. Methodologies include: <ul style="list-style-type: none"> <li>• Institutional ethnography</li> <li>• Policy/discourse analysis</li> <li>• Case studies</li> </ul>
Technology	<i>Digital devices</i>	Devices (digital media, sites, technology or texts)	Explores how digital devices are assembled and how they they configure other devices, institutions, people, concepts. Methodologies include: <ul style="list-style-type: none"> <li>• Virtual/visual ethnography</li> <li>• Multimodal analysis of design and affordances of devices</li> </ul>

#### **4. Lessons for research into literacy in the digital university**

In reality, most studies into academic 'digital literacy' practices position 'the Digital' at a number of levels simultaneously. The metric analysis discussed above incorporated 'digital identities' (represented by an academic's 'digital footprint') and 'digital networks' (illustrating relationships between individual footprints). The survey also incorporated 'digital identities' (categorised as users/non-users and academics of one or another faculty) but also reflected the 'digital university' by exploring how academic identities interact with institutional processes, mediated by digital artefacts. The ethnographic approach



focused on one particular 'digital community' (the Pelagios project) but included an element of the material 'digital device' by incorporating analysis of the project's Twitter hashtag. And as a whole, the mixed-method study on the use of Twitter by academics at the OU incorporated all four framings. However, as the previous discussion has demonstrated, attempts to merge method-assemblages without acknowledging the different framings of the 'the Digital' inherent within inevitably results in tensions and inconsistencies in the data.

Moreover, the different enactments of 'the Digital' through method have different implications for the 'collateral realities' produced by research studies. As with the commercial tool Klout, the 'digital footprint' tool and corresponding metric analysis reproduces a particular notion of 'influence' based on certain quantitative indicators. Such a conceptualization – and one which serves the competitive purpose of standardized comparison – has the ontological potential to nudge Twitter-use towards activities which will increase the size of an individual's footprint (for example, strategically amassing followers and writing as many tweets as possible). Conversely, a survey-based method assemblage reproduces particular identities (such as Twitter-user or non-user or discipline-based academics) and casts digital academic practice as an individualized rather than social practice. Finally, an ethnographic approach has a tendency to prioritize the community over the individual and the social over the material (though attention to the materiality of Twitter through analysis of the 'hashtag' can to some extent mitigate this.)

In all cases then, methodological approaches to researching 'digital literacy' embed particular framings of 'the Digital' and have, in Barad's (2003) terms, 'ethico-onto-epistem-ological' implications. Acknowledging how 'the Digital' is framed by different methodological tools might ensure that data is more consistent and reliable. Acknowledging the 'collateral realities' embedded in these framings might contribute to a more explicit recognition of the ethics of the research and the ideological agendas it responds to.

## **References**

- Barad, K. (2007). *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Durham, NC: Duke University Press.
- Barad, K. (2003). 'Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter'. *Signs* 28 (3): 801-31.
- Barton, D. and Tusting, K. (eds.) (2005). *Beyond Communities of Practice: Language, power and social context*. Cambridge: Cambridge University Press.
- Borgman, C. (2007). *Scholarship in the Digital Age: Information, Infrastructure, and the Internet*. Cambridge, MA: MIT Press.
- Burawoy, M. (2005). 'Provincializing the Social Sciences' in Steinmetz, G. (ed.), *The Politics of Method in the Human Sciences: Positivism and its Epistemological Others*, Durham, NC: Duke University Press, pp. 508–525

boyd d, Golder S, and Lotan G. (2010). Tweet, tweet, retweet: Conversational aspects of retweeting on Twitter. HICSS-43. IEEE: Kauai HI, January 6.

Callon, M., (1998). 'The embeddedness of economic markets in economics', in M. Callon (Ed.), *The Laws of the Market*, Oxford: Blackwell.

Cope, B. & Kalantzis, M. (2009). "Signs of epistemic disruption: Transformations in the knowledge system of the academic journal". In *First Monday*, 6 April 2009 14 (4)

Cuddy, C. (2009). 'Twittering in Health Sciences Libraries' *Journal of Electronic Resources in Medical Libraries* 2009, 6 (2)

Cummings, J., Butler, B., & Kraut, R. (2002). *The quality of online social relationships*. Communications of the ACM, 45(7), 103-108.

Deleuze, G. and Guattari, F. (1987). *A Thousand Plateaus*. Minneapolis: University of Minnesota Press. Dubé et al. 2006

Derrida, J. (1982). 'Differance', *Margins of Philosophy*. Chicago and London: University of Chicago Press.

Elavsky, C. M., Mislán, C. and Elavsky, S. (2011). 'When talking less is more: exploring outcomes of Twitter usage in the large lecture hall' *Learning Media and Technology*, 36 (3)

Eshet-Alkalai, Y. (2004). 'Digital Literacy: a conceptual framework for survival skills in the digital era'. *Journal of Educational Multimedia and Hypermedia*, 1391:93-106.

Fernandez-Villavicencio, N.G. (2010). 'Helping students become literate in a digital, networking-based society: A literature review and discussion' *International Information and Library Review*, 42 (2)

Fransman, J. (2012). 'Re-imagining the conditions of possibility of a PhD thesis' in Andrews, R., Borg, E., Boyd Davis, S., Domingo, M. and England, J. (eds.) (2012) *The Sage Handbook of Digital Dissertations and Theses*, London: Sage. (May 2012)

Goodfellow, R. (2011). Literacy, literacies, and the digital in higher education. *Teaching in Higher Education*, 16(1), pp. 131–144.

Haraway, D. (1997).

Modest\_Witness@Second\_Millennium.Female\_Man©\_Meets\_Oncomouse™ :  
Feminism and Technoscience New York and London: Routledge.

Haythornthwaite, C., & Kendall, L. (2010). Internet and community. *American behavioral scientist*, 53(8)

Hazemi, R. and Hailes, S. (eds.) (2002) *The Digital University - Building a Learning Community*, pp. 203-214. Springer.

Holland, D., Lachicotte, W., Skinner, D. and Cain, C. (1998). Identity and Agency in

Cultural Worlds. Cambridge, Mass.: Harvard University Press.

Kassens-Noor, E. (2012). 'Twitter as a teaching practice to enhance active and informal learning in higher education: The case of sustainable tweets' *Active Learning in Higher Education*, 13 (1)

Kenton, J. and Blummer, B. (2010). 'Promoting Digital Literacy Skills: Examples from the literature and implications for academic librarians', *Community and Junior College Libraries* 16(2)

Latour, B. (2005). *Reassembling the social: An introduction to actor-network-theory*, New York: Oxford University Press.

Latour, B. and Woolgar, S. (1979). *Laboratory Life: the Social Construction of Scientific Facts*. Beverly Hills and London: Sage.

Lave, J. and Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.

Law, J. (2010). 'The double social life of method' Paper presented at the Sixth Annual CRESC conference on the Social Life of Method, 31st August – 3rd September, St Hugh's College, Oxford.

Law, J. (2009). 'Collateral Realities' version of 29th December 2009, available at <http://www.heterogeneities.net/publications/Law2009CollateralRealities.pdf> (Downloaded on 30th December 2009).

Law, J. (2004). *After Method: Mess in Social Science Research*. London: Routledge.

Law, J. (1991). *A sociology of monsters: Essays on power, technology, and domination*. London: Routledge.

Lea, Mary R. (2007). Emerging literacies in online learning. *Journal of Applied Linguistics*, 4(1), pp. 79–100.

Lea, Mary R. and Jones, Sylvia (2011). Digital literacies in higher education: exploring textual and technological practice. *Studies in Higher Education*, 36(4), pp. 377–393.

Marwick, A. and D. boyd. (2011). 'I tweet honestly, I tweet passionately: Twitter users, context collapse, and the imagined audience' *New Media and Society*. 13(1)

McKenna, C. (2006). 'Disrupting the narrative: the hypertext essay as a challenge to academic writing' *Academic Literacies Annual Symposium* University of Westminster, June 2006

Mol, A. (1999). 'Ontological Politics: a Word and Some Questions'. In J. Law and J. Hassard (Eds.) *Actor Network and After*. Oxford and Keele: Blackwell and the Sociological Review: 74-89.

Nie, N. H. (2001). *Sociability, interpersonal relations, and the Internet: Reconciling conflicting findings*. *American Behavioral Scientist*, 45(3), 420–35.

Pearce, N.; Weller, M.; Scanlon, E. and Kinsley, S. (2010). Digital scholarship considered: how new technologies could transform academic work. *In Education*, 16(1),

Prensky, M. (2001). 'Digital Natives, Digital Immigrants' *On the Horizon* 9(5).

Reed A. (2005). 'My blog is me': Texts and persons in UK online journal culture (an anthropology)'. *Ethnos* 70(2)

Rinaldo, S. B., Tapp, S. and Laverie, D. A. (2011). 'Learning by Tweeting: Using Twitter as a Pedagogical Tool' *Journal of Marketing Education* 33 (2)

Schreibman, S., R.Siemens and J. Unsworth (eds.). (2004). *A Companion to Digital Humanities*, ed. Oxford: Blackwell, <http://www.digitalhumanities.org/companion/>

Steinfeld, C., DiMicco, J. M., Ellison, N. B., & Lampe, C. (2009). "Bowling Online: Social Networking and Social Capital within the Organization." Proceedings of the Fourth Communities and Technologies Conference.

Street, B. (1984). *Literacy in theory and practice*, Cambridge: Cambridge University Press.

Tyma, A. (2011). 'Connecting with What Is Out There!: Using Twitter in the Large Lecture' *Communication Teacher*, 25 (3)

van Leeuwen, T. (2005). *Introducing Social Semiotics*. London: Routledge

Wang, H. and Wellman, B. (2010). 'Social Connectivity in America: Changes in Adult Friendship Network Size from 2002 to 2007. *American Behavioral Scientist* 53(8): 1148-1169.

Wenger, E. (1998). *Communities of Practice: Learning, meaning and identity*. Cambridge, UK: Cambridge University Press.

Weller, M. (2011). *The Digital Scholar: How Technology Is Transforming Scholarly Practice*. Basingstoke: Bloomsbury Academic.

Weller, M. (2010). Big and little OER. In: OpenED2010: Seventh Annual Open Education Conference, 2-4 November 2010, Barcelona, Spain.